

Figure 1 (Prior Art)

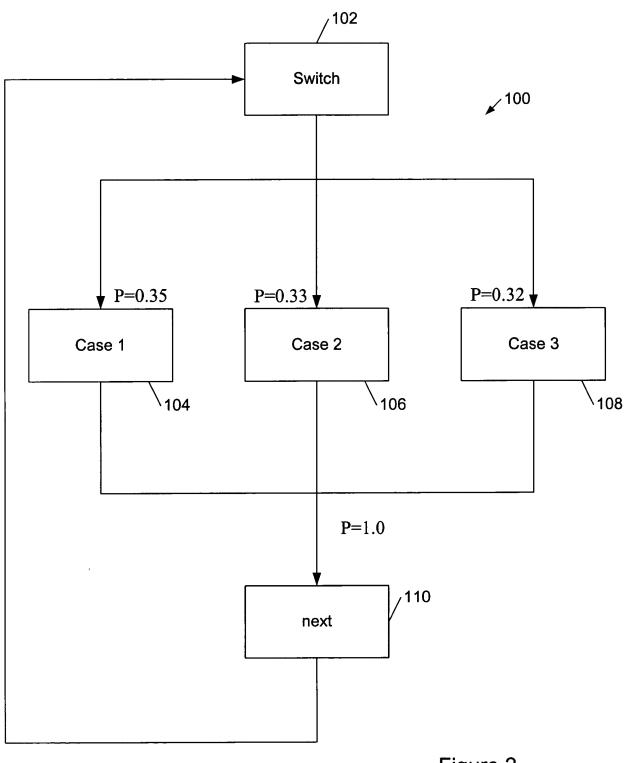
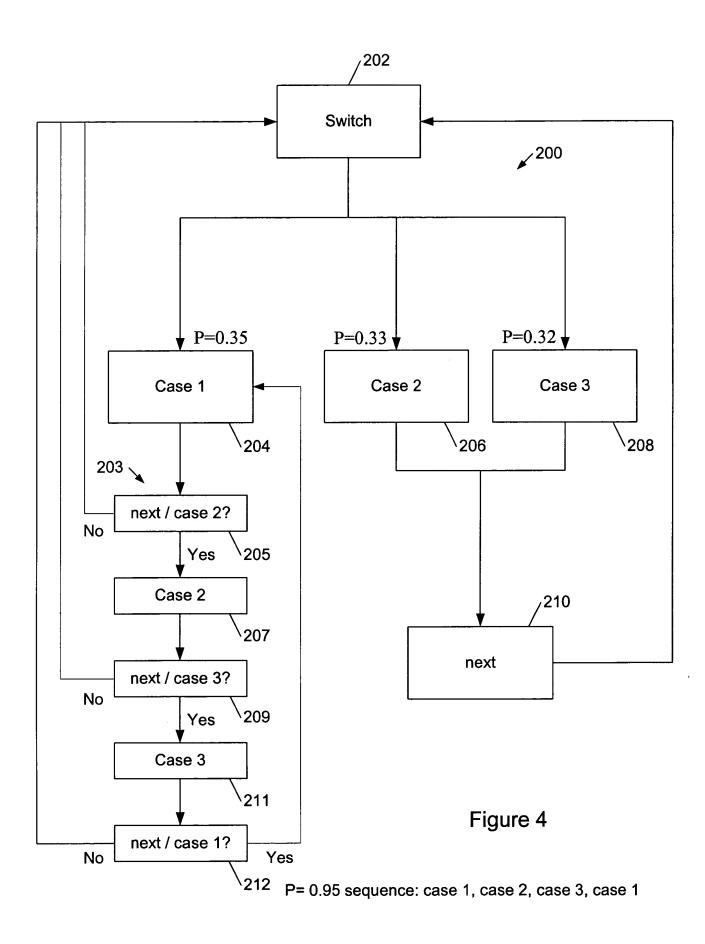


Figure 2 (Prior Art)

```
Id [case], r1 /* next processing */
.switch:
cmp r1, 1
be .case1 P dynamic =0.65
nop
cmp r1,2
be .case2 P dynamic =0.51
nop
cmp r1,3
be .case3 P dynamic =1.00
nop
ba .defaultcase
```

Figure 3 (Prior Art)



## **Transformed Code**

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.case1: /\* case 1 code \*/ Id [case], r1 /\* expanded next \*/ cmp r1, 2 /\* case 2 test \*/ bne .switch P dynamic =0.95 Nop /\* case 2 code \*/ Ld [case], r1 /\* expanded next \*/ cmp r1,3 Bne .switch P dynamic =0.95 Nop /\* case 3 code \*/ Ld [case], r1 /\* expanded next\*/ cmp r1,1 Be .case1 P dynamic =0.95 Nop Ba .switch

Branches executed most often are accurately predicted

Figure 5

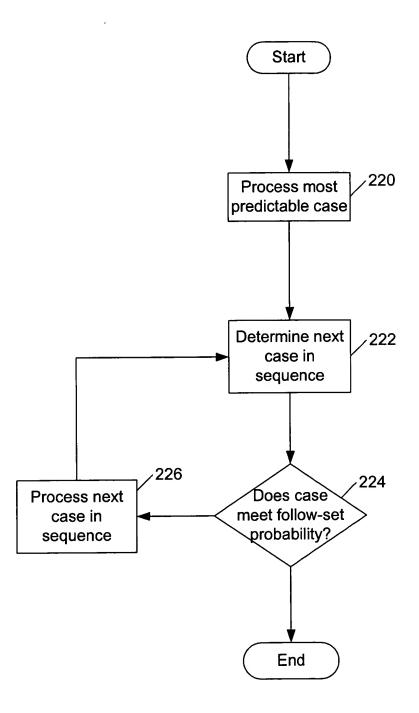
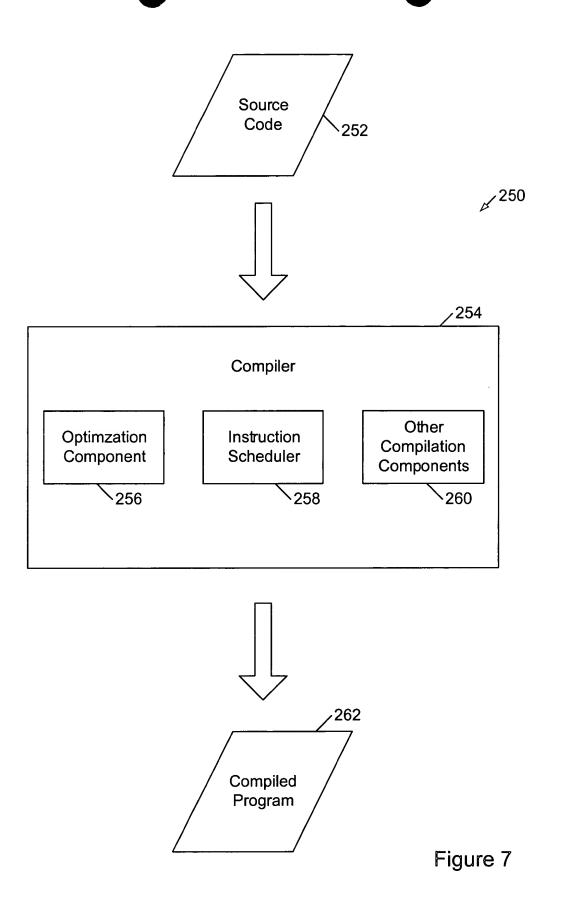


Figure 6



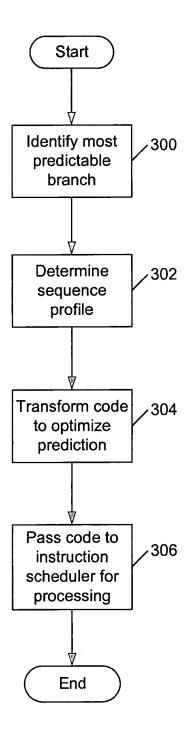


Figure 8